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PRINCIPAL INVESTIGATOR: Robert E. Hardy, M.D., MPH

CONTRACTING ORGANIZATION: Meharry Medical College
Nashville, TN 37208

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Abstract

Low income women experience more morbidity and a shorter survival compared to more affluent women. Yet these women are least likely to avail themselves of screening and early detection testing which has been previously demonstrated to be associated with prolongation of survival for women subsequently diagnosed with breast cancer.

The goal of this project is to increase screening and early detection practices in low income women, forty years and older, who are enrolled in a statewide HMO. It compares the relative effectiveness of two interventions (a simple one using a letter of invitation and a more intensive "step-wise" intervention of two sequential letters and follow-up counseling and home visits). Both interventions are compared with a control group of women who continue to receive their "usual care".

Thus far our results show a positive trend in the use of screening mammograms in groups. A more complex intervention of intensive counseling with members of Group III will be conducted and the results analyzed in the near future.

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Robert E Hardy 10-20-98

PI - Signature Date

Table of Contents

Nature of the Problem

Breast cancer is the leading cause of non-skin cancer affecting American women, with a life time expectancy of about 12% for all US women. More then 180,000 cases are expected to develop in 1998 and 46,000 deaths will occur (1). Recently breast cancer has shown a decline in mortality for US women, but while this trend is evident among white women, evidence of a decline is not yet evident for African American females (2). Evidence suggests that this trend is the result of both earlier detection and earlier treatment when localized, and adjunctive treatment of women at high risk for recurrence of their cancer and metastasis after primary treatment.

A number of studies have indicated the usefulness of adjunctive systemic chemo and hormonal therapy for women at risk for breast cancer recurrence (3,4,5). A review of historical cohort trends in breast cancer survival for British Columbia women treated before and after the advent of this type of treatment demonstrated a subsequently decline in breast cancer mortality (6). More recently several studies have documented the further increase in survival of women with breast cancer who are treated with systemic chemotherapy plus radiation therapy above that of adjunctive chemotherapy alone (7,8).

It is estimated that much of the reduction in breast cancer is also due to early detection as evidenced by an increase in minimal and non-invasive to invasive beast cancer ratio, a pattern previously demonstrated for cervical cancer (9). This decline in the ratio of invasive to non-invasive breast cancer has occurred during a period when there has been increased public emphasis upon the use of screening and early detection methods.

Mortality from breast cancer is most preventable when diagnosed at its earliest stages, when it is non-invasive or in the absence of regional spread.

Mammography is the only screening test to be demonstrated by prospective clinical trial to decrease cancer mortality (11-13). Its efficiency and relative safety is well accepted and barriers to its use such as cost and availability are gradually being overcome (14). Although there has been a significant increase in the utilization of mammography in conjunction with clinical breast exam, the technology continues to be underutilized, especially among certain hard-to-reach groups (minority, the poor and elderly women), who consistently participate at lower rates than more affluent white women (15-17).

A lack of adherence to breast cancer screening guidelines is a serious problem for these women because of barriers which seem to relate to their socioeconomic and age status. As a result a number of approaches have been tried in order to overcome related barriers. One strategy recently reported has been to reach women through their health maintenance organization (18,19). In both studies the screening mammography rates increased by using simple interventions. With the advent of health care reform a larger proportion of the American population is expected to be covered by Managed Care Organizations (Health Maintenance Organizations - {HMO}). These organizations offer a unique opportunity to develop novel approaches to the prevention and early detection and treatment of breast cancer. Their advent offers a number of advantages such as: (1) access to large numbers of patients and their records; (2) access to HMO provider-related databases; and (3) resources for screening and other preventive health services.

The purpose of this project is to demonstrate that the screening behavior of low income women enrolled in a managed care organization can be positively impacted and screening mammography rates can be significantly increased if simple interventions are employed.

BODY OF REPORT

Purpose of Research

Our research is to ultimately reduce the morbidity and mortality of breast cancer among the population of low income women who have incomes less than 200% of the national poverty level. Our strategy is to compare the effectiveness of a relatively simple technique to a more complex intervention to reach and effect a significant change in the behavior of the subjects. We hope that this approach will become a model for similar groups elsewhere.

The goals of this project are twofold:

(a) To increase breast cancer screening and early detection by mammography in low income women, forty years of age and above, who are enrolled in a statewide HMO-using a culturally sensitive "step-wise" approach; and

(b) To increase the number of early breast cancers detected - at a time when they are most curable - and to reduce the number of advanced cancers detected so as ultimately decrease Beast Cancer morbidity and mortality.

Technical Objectives

1. To institute a culturally sensitive stepwise intervention to overcome barriers to screening in low income women.

2. To compare the stepwise intervention to a more simple intervention.

3. To document and evaluate the process and outcome results of various screening approaches used to reach this population.

Hypothesis

The study seeks to test three hypotheses:

a. **H1** A culturally appropriate, step-wise, in-reach intervention which addresses knowledge, attitudinal and logistical barriers will increase mammography utilization in a low-income managed care organization at least 20% over a usual care group from the same HMO.

b. **H2** An intervention involving a simple reminder letter will increase mammography utilization 10% over a usual care group.

c. **H3** A culturally appropriate, step-wise, in-reach intervention which addresses knowledge, attitudinal and logistical barriers will increase mammography utilization in a low income managed care organization at least 10% over a simple reminder letter.

Methodological Approach

The purpose of this methodologic approach is to overcome screening barriers experienced by low income women. Our research is based upon a useful model of diagnostic, intervention, and evaluation to influence change and enhance health status. This model developed by Michileutie identifies predisposing, enabling and reinforcing factors to primarily influence process outcomes (reaching high risk women, increasing their knowledge, and skills necessary to participate in screening, sensitizing physicians, institutionalizing screening policies, changing negative and neutral attitudes about screening). The project provides knowledge through the interventions thus predisposing them to positive change (intermediate outcome). It is enabling through the provision of increased access by the HMO which provides coverage for the procedure, physician follow-up and transportation. Finally, reinforcement is insured by the provision of counseling and educational literature for participants (Figure 1).

1. Project Design

This study builds upon two interventions recently reported in the literature using HMO populations. In one study a randomized trial was conducted to evaluate the combined impact of a reminder letter from a personal physician and a telephone contact on the use of Pap-tests and mammograms in low income managed care organization (16). The second study evaluated a stepped intervention involving two reminder letters, a letter from their primary care physician and a telephone counseling session from a health educator (17). The study also builds upon ongoing work by the Meharry investigators who previously demonstrated the effectiveness of a simple intervention of news letters to providers and HMO-signed letters to member-clients (19). The proposed study will use a culturally sensitive intervention providing personal contacts through trained lay health (peer) workers in home visits and small group interactive sessions. The project utilizes a randomized trial.

Evaluation will consist of comparing the comprehensive intervention with the usual care and the simple intervention groups. Comparisons will also be made with results from the previous studies.

2. Study Population

The study population consists of women 40 years and older who are enrolled in the Tennessee Managed Care Network (TMCN) in Nashville Davidson County, Tennessee. TMCN is the second largest of the twelve managed care organizations (MCO) that have contracted with the state of Tennessee to serve as HMO's for the former Medicaid population and the working poor. The state obtained a waiver from the federal government (DHHS) in December 1993 to create TennCare as a demonstration project for five years from January 1, 1994.

The population of women in this age group is enrolled in TMCN in Davidson County was found to be 1400 women 40 and above as opposed to preliminary data suggesting two and one half times that number. Since initiation of the intervention we have found 1242 women who were non screening participants eligible for intervention. To expand the targeted population the project has been successful in securing the agreement of TMCN to allow the inclusion of eligible women/members 40 years and older residing in Chattanooga, Hamilton County.

Situated 125 miles south east of Nashville, Chattanooga is the fourth largest metropolitan area in the state. African Americans make up 19 percent of the population compared with 20% for Nashville Davidson. The median income is comparable for the two cities and TennCare eligibility requirements are the same. The number of TennCare lives covered by TMCN are comparable for the two cities.

An additional 1,163 women 40 and over have been added to the Nashville population.

3. Research Design

From the medical claims database, accessed from the organization's home office in Nashville, computerized medical claims data have been reviewed to identify female enrollees 40 years and older who are eligible for inclusion in the study. Those without a claim for a mammogram in the previous year (for those 50 years old or older) or the previous 2 years (for those 40 to 49 years old) have been randomly assigned into one of three groups. Thus the research design is a randomized trial with three groups (a control group and two intervention groups). Women in one group (control) receive the usual care only; women in a second group receive a written reminder, while women in the third group receive an intensive step-wise intervention designed to overcome real and perceived barriers to screening.

Patients were selected into three groups using Stratified Random Sampling Scheme. Stratification was done to make groups homogenous in terms of age, race and county of residence.

4. Intervention Design

a. Experimental Groups: The three experimental groups are characterized as follows:

(i) **Group 1**

(Usual Care): Visits physician for health care needs only, does not participate in interventions initiated by this project.

(ii) **Group 2**

(Simple Intervention): Receives usual care plus a prompter letter stating the need for annual mammograms.

(iii) **Group 3**

(Comprehensive-Step-Wise Intervention): Receives usual care plus a prompter letter followed by a reminder letter followed by phone calls, then interactive group sessions, then home visits.

b. Intervention Procedures

All experimental groups will have barriers removed to differing extents. All groups will benefit from the resources provided by the MCO. Barriers will be addressed by the intervention program as outlined in Chart 2. How barriers are handled within each experimental group is described below.

(i) **Barriers Removed by Usual Care from TMCN**

Lack of Knowledge: TMCN distributes a newsletter every month to providers and members. The newsletter features different awareness campaigns at the discretion of the editor.

Access to Services: TMCN provides transportation to members for services, as needed. TMCN also has special training for lay health outreach workers within low income housing projects.

Availability of Services: TMCN stresses to its provider membership that breast cancer prevention and control procedures be instituted for all clients as a part of physical assessment. Lay health outreach workers will facilitate follow-up visits as scheduled by primary care physicians or as needed.

Cost of Services: TMCN reimburses up to $66 for mammograms.

Culture: TMCN Lay health workers are former welfare recipients recruited from low income projects and undergo a 5-month training program.

Physician Attitudes: These will be affected via TMCN newsletter awareness campaigns.

(ii) **Barriers Removed by First Level Experimental Intervention Groups 2 & 3**

Lack of Knowledge:
Brochures beyond Newsletter letter from MCO Medical Director
Reminder letter (physician office mailing)
All other barriers addressed by Usual Care (i) above

(iii) **Barriers Removed by Intensive Intervention (Group 3)**

Lack of Knowledge: Contact and Counseling by CHOW's

Access to Services:
Distribution of transportation vouchers routinely for visit to providers and for mammograms;
Priority Appointments;
Reminder letters and telephone counseling

Availability of Services: A tracking system to facilitate follow-up visits; combined with reminder letters, telephone calls and home visits.

Culture:
Training lay health outreach workers intensively on cultural sensitivity;
Using familiar sites for special program activities e.g. churches, clinic sites;
Developing culturally-sensitive information at the appropriate literacy levels to overcome culturally-inducted attitudes of fear, inertia, self medication, hopelessness;

Apply individually - appropriate counseling.

Physician Attitudes:
Design special education sessions to improve attitudes
Designing a reminder system for physicians
All other barriers addressed by (ii) above

Results
Statement of Work:

The following is an outline of the planned schedule of activities and actual accomplishments of the project:

	Proposed	**Actual**
• Community Health Outreach Workers (CHOWs) training and baseline survey	Month 9	Month 11 & 12
• Initial prompter letter mailed out to targeted women over the signature of MCO Medical Director	Month 9	Month 15
• Interim analysis of claims data from MCO	Month 12	Month 19
• Second letter mailing to women in Groups III	Month 12	Month 19
• Interim analysis of claims data from MCO	Month 15	Month 23
• Training CHOWs for intervention (counseling of members contacted): Group III	Months 15-17	Months 23-25
• Interim analysis of claims data after stepped intervention	Month 19	Month 27
• Addition of Chattanooga women: Randomization of Groups I, II, III		Month 24
• 1st prompter letter mailing over the signature of MCO Medical Director - Groups II & III Chattanooga women		Month 25
• MCO Claims Data Analysis	Month 28	

- Second (PCP) letter mailing to Chattanooga women; Group III — Month 28
- Training Workshop for Chattanooga CHOWs — Month 31
- Group III intervention - home visits; counseling of women by CHOWs — Month 31-32
- Claims Data Analysis — Month 35
- Analysis of Data, Writing and Publications of Results — Months 36-40

The project staff and investigators have developed a close working relationship with the TMCN officials (Department of Community Outreach and Disease Prevention). Initial resistance to supplying needed claims data has been overcome. The intervention effort has been overwhelmingly supported by the MCO. The TMCN has played a critical role by providing: (1) the population of women, (inclusive of data); (2) lists of primary care physicians (PCPs) to whom the women are assigned; (3) TMCN stationery and letterhead for letters signed by the MCO Medical Director; and (4) donation of the services of their Community Health Outreach Workers (CHOWs) to assist in carrying out the project.

The assistance of the these Community Health Workers has been critical in carring out this project and we continue to explore ways in which we can make their efforts more effective.

Following the planned experimental design, Groups II and III have been recipient of one and two letters, respectively, Group III has had personal contact intervention and counseling by CHOWs.

Interim Results

We are receiving claims data in every three months. The following table shows monthly mammography screening claims data. Considering accumulation up to the August 9, 1998. The largest number - 39 mammograms were recorded for the complex intervention - Group III and the lowest - 23 for simple intervention Group II. Although, it is quite early to assess the intervention effect while interventions are in the implementation phase, it would be beneficial to see a directional trend in the accumulated data set.

A χ^2 test was performed to assess any significant difference in overall and between the groups. As expected, there is a marginally significant (P=0.07) differences found among the groups. There is no significant difference between Group I and Group II. However, a significant difference is found between Group I and Group III (P=0.09), and Group II and Group III (P=0.03).

Breakdown of Claims Data by Month

Year	Month	Group I	Group II	Group III	
1997	Total	35	41	27	Baseline
	December	2	3	2	****
1998	January	2	0	5	
	February	8	4	7	
	March	2	3	6	
	April	5	5	6	
	May	3	1	7	****
	June	1	2	2	
	July	2	3	3	
	August	1	2	1	
	Total	26	23	39	

****Mailing Date

The intensive face to face counseling intervention with group III is presently in progress.

Validation of the Method

Based upon evaluation of the process and experience gained on initial baseline survey of the population, one manuscript has been submitted and reviewed for publication in the "Journal for Health Care for the Poor and Underserved" (see appendix). Entitled "Difficulty in Reaching Low Income Women for Screening Mammography", the authors discuss problems encountered in attempting to contact the targeted women. The findings provide insights for future program planning and research design. (see appendix)

A second manuscript is in progress based upon analysis of data on reported barriers from the baseline survey. The results indicate that cancer knowledge, being currently married, level of education and having heard a large amount of cancer information were associated with a decreased total barriers as reported by these women. (see appendices 1, 2, 3)

Problems Encountered

1. Population Size: As reported in the year 1 annual report, a total of 1400 subjects were available from TMCN's membership in Nashville, less than the anticipated 3,500 initially planned for in the experimental design. Because of attrition the number of eligible women not having had screening mammograms has become 1,242. To overcome this problem, TMCN, a statewide organization, has agreed to allow us to include suitable women in Chattanooga who are covered by them. The women have been identified, randomized and the initial intervention (from MCO Medical Director) letters have been mailed out. An additional 1,140 women have been added to the targeted population for a total of 2,382 women now included in the study.

We anticipate that the inclusion of the new similar site, Chattanooga, will increase the statistical power (1-β) of detecting the true differences among the groups according to the intensity of the intervention in the groups. We expect a least 10% positive differnece will occur between the usual care -- "control group" and the simple intervention and between the simple intervention and the complex stepwise intervention group with a type (α) error at the 5% level with a power ranging from 80% - 90%.

Contact Difficulties

Being a member of an MCO usually allows access to a population. However, we have found that it is often quite difficult to contact members of this population who are poor and Medicaid recipients. We have also learned that the MCO personnel have difficulty reaching many of the members and as many as 40 percent of members do not keep appointments with their primary care physicians as scheduled.

As previously reported, most of these women do not have telephones. Moreover, often when CHOW's make visits subjects may have moved or may be working. Most persons on public assistance are now required to work under the state's Family's First program, making it more difficult to contact them if they have no telephone.

Investigators and MCO staff have developed strategies to increase the rate of contact with the subjects. These have included changing hours of work for some CHOW's to early evening and Saturdays.

Claims Data Reliability

The numbers of claims for women obtaining screening mammograms seem low for the amount of marketing in the general environment, even for these women. The rate , 10 percent of our population, is also lower than the reported rate of all TennCare Women statewide.

A reason for this lower than expected claims submission might be "Plan Hopping". A women might get a mammogram paid for by another MCO in the previous year then change from that other plan to Access Med Plus (TMCN) during the annual open enrollment. Approximately 10 percent of members change plans annually.

The staff with the cooperation of TMCN will continue to sample the population of noncompliers to validate screening noncompliance.

In Summary

Our experience with this project has taught us that the Medicaid population is different from other groups who may be covered by insurance systems or Managed Care companies previously reported on in the literature. The circumstances surrounding the socioeconomic status of these women makes it difficult to contact them for intervention. This requires extra effort and innovation. The project has followed though with the initial phase of simple letter(s) intervention, the results of which show a trend in positive direction with a low statistical power. To add power to the study, the population is being doubled.

The significance of this project will be to demonstrate a strategy to reach this Medicaid population for breast cancer screening. The project owes a great deal of thanks to the Tennessee Manage Care Network for its cooperation and help in carrying out this project.

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Appendices

Figure 1 Disease Prevention & Health Promotion Model

Letter from MCO - Medical Director

Letter from Primary Care Physician

Agenda for CHOW's Training Workshop

Brochure & Intervention Script

Member Outreach Activity Form

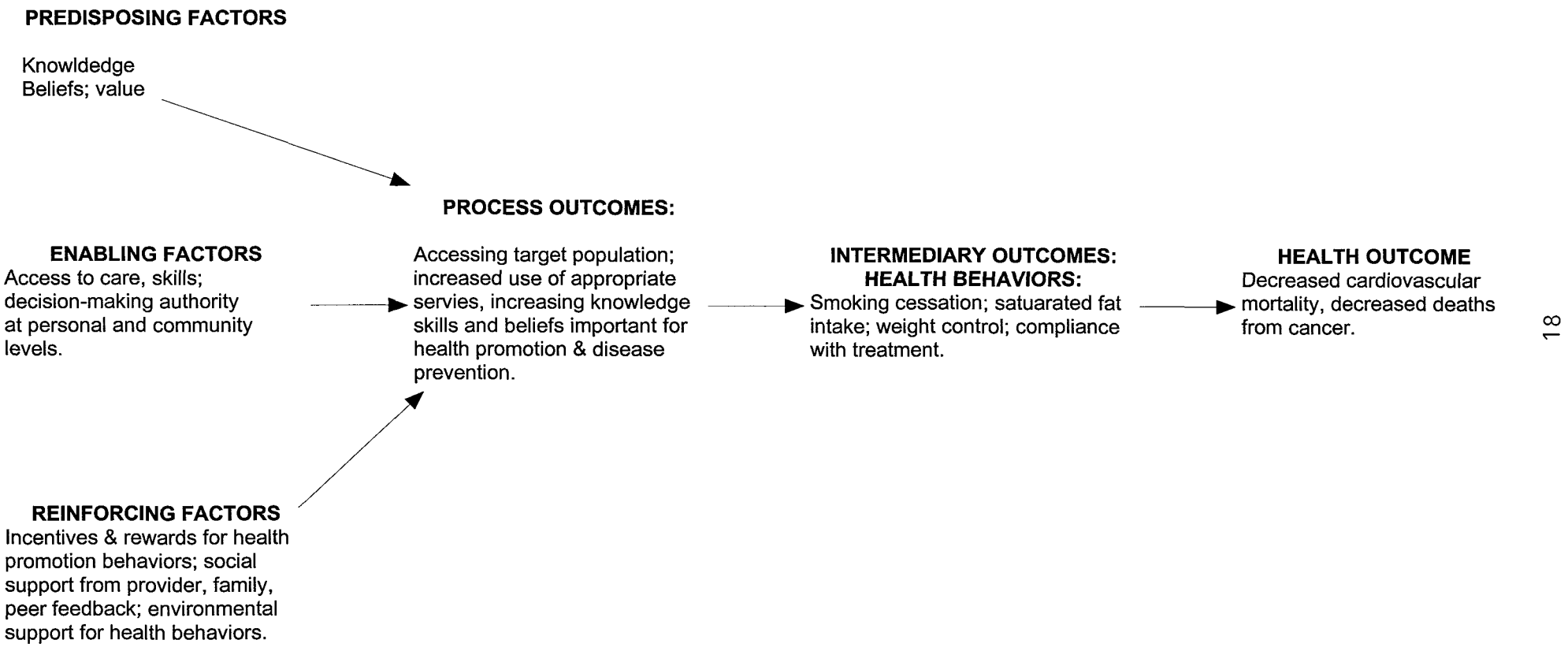
Barriers to Screening Analysis

- Table 1 Economic Barriers
- Table 2 Screening Correlation
- Table 3 Barrier by Regression Analysis

Manuscript: Difficulty in Reaching Low Income Women for Screening Mammography

Figure 1

Disease Prevention, Health Promotion Intervention Model



Access... Med PLUS
A Quality Health Plan Your Family Can Trust
Tennessee Managed Care Network

October 16, 1998

Ms. Mary Jones
109 East Lake Street
Nashville, TN 37208

Dear Ms. Jones:

This letter is written to encourage you to participate in breast health care. Having a mammogram (x-ray of the breast) is an important part of good breast care.

Your doctor will check you and order a mammogram. The purpose of doing the mammogram is to help to find a small lump if there is one. Some lumps may be too small for you or your doctor to feel. While most lumps are not cancerous, a few are. For those which are, finding cancer early may save your breast and your life.

One in nine American women will get breast cancer at some point in their lives. The chances of getting it increase with age.

The American Cancer Society recommends:

1) women between ages 40-49 should have a mammogram every 1 to 2 years

2) women age 50 and above should have a mammogram every year

Access... **Med*PLUS*** has made funds available so that your doctor can order this test at no cost to you. The results will be returned to your doctor and an appointment will be made to discuss the results with you.

Wellness is the aim of Access...**Med*PLUS*** and the doctors who are a part of the network. We will continue to provide services to promote your good health.

Sincerely,

P.S. Weaver

Patricia A. Weaver, M.D., MSPH
Medical Director
Tennessee Managed Care Network
Access...***MedPLUS***

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205 Reidhurst Avenue
Suite N-104
Nashville, Tennessee 37202-0205
(615) 329-2016

East Tennessee Regional Office
900 East Hill Avenue
Suite 175
Knoxville, Tennessee 37915
(423) 522-7799 Fax (423) 522-1699

Chattanooga Office
431 E. Martin Luther King Blvd.
Chattanooga, Tennessee 37403
(423) 267-1544 Fax (423) 267-6832

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(901) 726-0027 Fax (901) 726-5445

WINSTON H. GRINER, SR. M.D.
FAADEP

Medical Director
Accident and Injury, Health Services
2001 Charlotte Ave., Suite 202
Nashville, TN 37203

(615) 329-1921
FAX (615) 329-3102

October 16, 1998

Ms. Mary Jones
109 East Lake Street
Nashville, TN 37208

Dear Ms. Jones:

As your doctor I want to help you stay well. For most health problems, the key is to find and treat the problem early.

A short time ago, you received a letter from Dr. Richard Carter, Medical Director of Access MedPlus, offering you a free mammogram (x-ray of the breast). If you have not already taken advantage of the offer, consider this a friendly reminder.

Women remain at risk for developing breast cancer and the chances of that occurring increase with age. Even if that should occur, cancer and other breast problems can be found early by mammography. When found early, it's most likely to be cured.

Access MedPlus is committed to the health of its members and has provided funding so that any female member, age 40 and above can have this test.

Since we have not ordered this test for you this year, call today and make an appointment at _____.

Thank you for your cooperation.

Sincerely,

David M. Seller, MD

Primary Care Physician

As your doctor I want to help you stay well. For most health problems, the key is to find and treat the problem early.

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Thank you for your cooperation.

Sincerely,

David M. Selby, MD

Primary Care Physician

Agenda

Promoting Breast Cancer Screening in a Low Income Managed Care Population

Intervention Outreach Meeting

Friday, August 21, 1998

9:00 a.m. until 11:00 a.m.

Cancer Control Research Unit

Meharry Medical College-Suite 405(TRRS) -Dental School Wing

Continental Breakfast.....Junxshun Food Services

Welcome & Introductions.....Dr. Robert E. Hardy & Mrs. Penni K. Dickerson

Research Staff (Dr. Hardy)

TMCN Community Health Outreach Worker Staff (Mrs. Dickerson)

Program Overview.....Mrs. Tonya Micah

Project Update.....Dr. Robert E. Hardy

Role of the CHORWS.....Mrs. Penni K. Dickerson

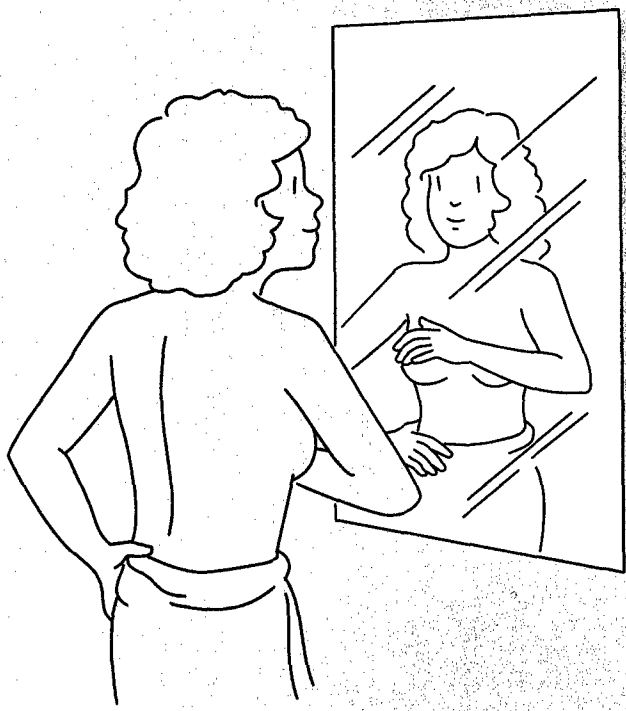
REACH-PROMOTE-ACTION-FOLLOW UP.....Mrs. Tonya Micah

- ⇒ Reaching the targeted Access Med...PLUS patients
  - ⇒ Patient Listing
  - ⇒ Use of additional resources
  - ⇒ Telephone Calls and Home Visits
- ⇒ Promoting mammogram screening to each targeted Access Med....PLUS patient
  - ⇒ Use of the script
  - ⇒ Use of brochures and other educational materials
  - ⇒ Forms to complete
- ⇒ Action & Follow Up
  - ⇒ Use of the script
  - ⇒ Checking the PCP listed
  - ⇒ Offering to schedule the appointment on the spot (when possible).
  - ⇒ Deliverables-gifts, brochures, and your business card

Question & Answer and Final Remarks.....Mrs. Tonya Micah or appropriate staff

What every woman should know

ABOUT BREAST HEALTH



Access... Med PLUS

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Tennessee Managed Care Network

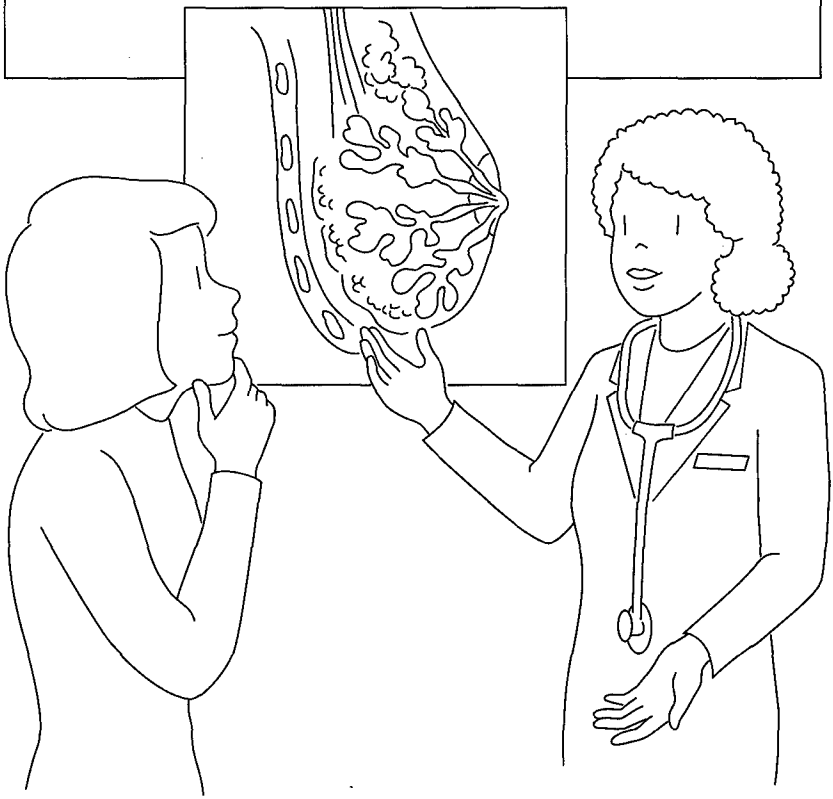
Managed by Medical Care Management Company, MC²

YOUR BREASTS ARE IMPORTANT TO YOUR HEALTH!

YET, BREAST HEALTH IS OFTEN OVERLOOKED

-- and often misunderstood. That's why many women:

- fail to recognize the warning signs of disease
- worry needlessly over harmless conditions
- endure unnecessary pain.



This booklet is not a substitute for an informed discussion between a patient and her health-care provider of the procedures or medications described in this booklet.

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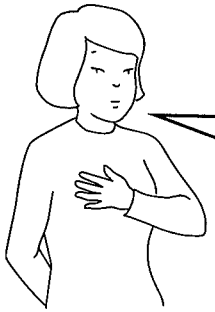
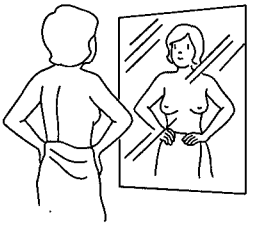


WHAT PART DO I PLAY IN BREAST HEALTH?

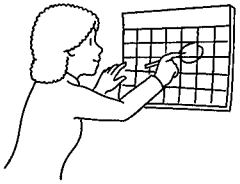
The leading role! To protect your health, you need to:

UNDERSTAND
how the female breast changes throughout the menstrual cycle and throughout life.

BECOME FAMILIAR
with your breasts and what is normal for you.



EXAMINE YOUR BREASTS
at the same time each month, so you'll notice any changes that may occur.



VISIT
a health-care professional regularly, and consult one whenever you have questions about your breasts.

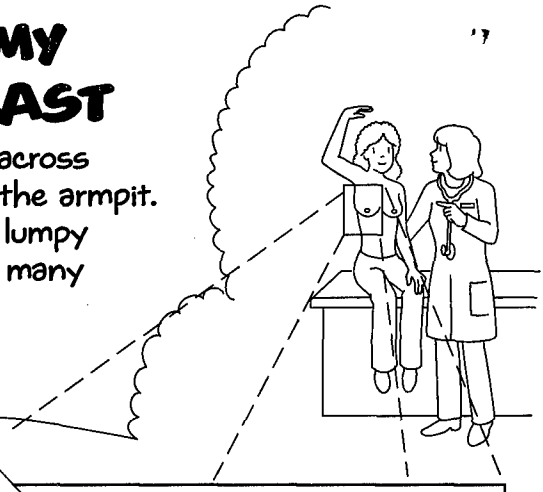
MOST WOMEN HAVE BREAST LUMPS
at some point in their life. The good news is:

- Most lumps are benign (not cancerous).
- Most breast cancers can be cured -- if they're detected and treated in time.

Learn more...

THE ANATOMY OF THE BREAST

Breast tissue extends across the chest and up into the armpit. The breast is naturally lumpy because it contains so many different structures:



MUSCLES

LYMPH NODES
-- which help fight infections

RESERVOIRS
-- which store milk

NIPPLE
-- which provides openings for milk

AREOLA
-- which lubricates nipple with oil

FAT
-- which protects milk glands

MILK GLANDS
("alveoli") -- which produce milk

DUCTS
-- to carry milk to reservoirs

LIGAMENTS
(bands of fibrous tissue) -- which support the shape of the breast.

HORMONAL CHANGES INFLUENCE BREASTS

throughout a woman's life. The use of oral contraceptives, hormone therapy and changes in weight can also affect breast size, lumpiness and tenderness.

DURING THE MENSTRUAL CYCLE

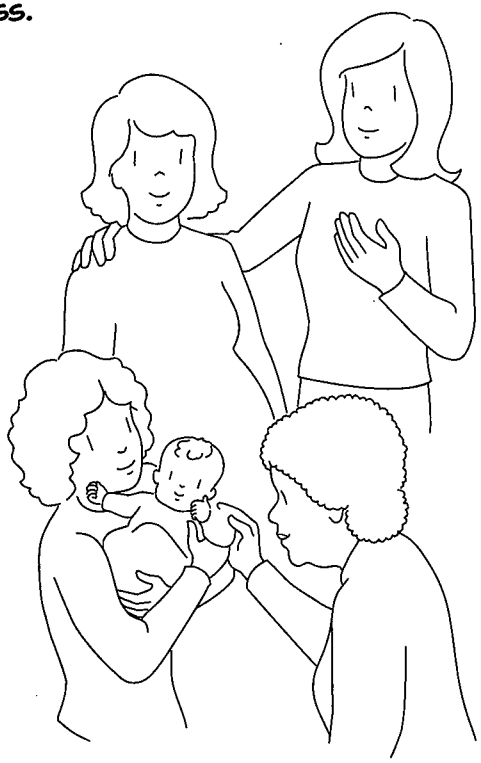
Breasts often become swollen, tender and lumpier in the week before menstruation.

DURING PREGNANCY AND BREASTFEEDING

Milk glands, ducts, areolae and nipples enlarge. Breasts feel heavy, lumpy and tender. When nursing stops, breasts return to their former size, but may be less firm.

DURING AND AFTER MENOPAUSE

Milk glands and ducts shrink, and breasts become smaller and softer. Supporting ligaments lose some of their strength.



HEALTHY BREASTS CAN:

- be different sizes or shapes
- have nipples that are flat or inverted (sunken into the areola)
- have nipples that point in different directions
- have areolae that are larger, smaller, darker or lighter than another woman's.

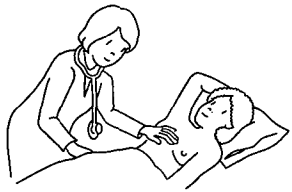
These characteristics are probably normal if a woman's breasts have always been this way.

BREAST CARE IS AS SIMPLE AS 1-2-3!

❶ PERFORM
a breast self-examination (BSE) every month.

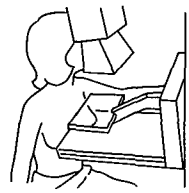
❷ SCHEDULE
professional breast exams:

- at least once every 3 years between ages 20 and 40
- once a year after age 40.*



❸ HAVE
a mammogram:

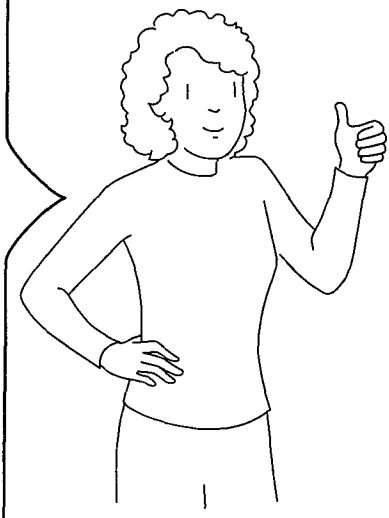
- once between ages 35 and 40 (for later comparison)
- every year beginning at age 40.*



*These are general guidelines. Your health-care provider may recommend a different schedule, depending on your personal or family health history.

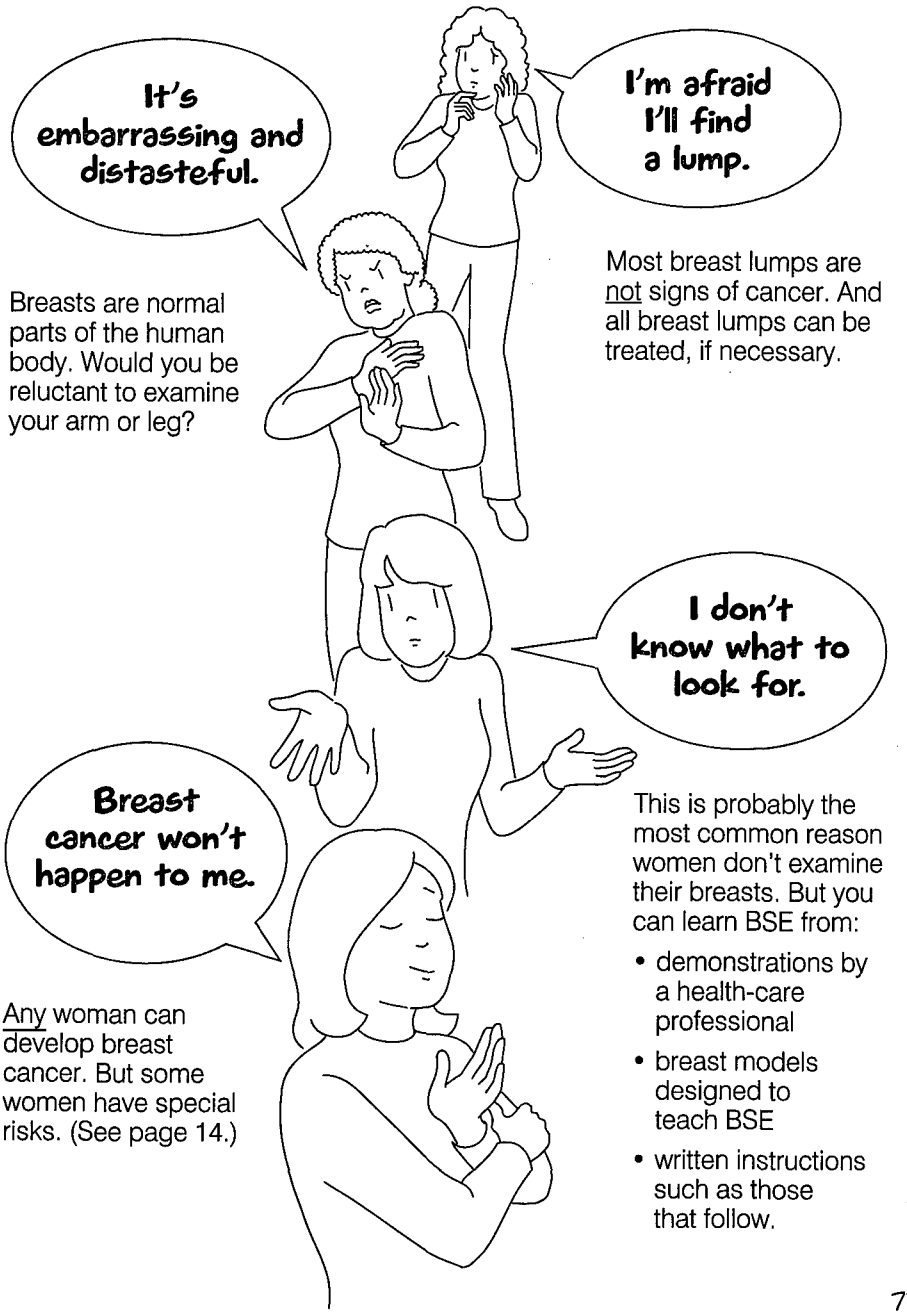
DOING BSE IS A GREAT INVESTMENT
in your health! It:

- takes only 10-15 minutes a month
- can be done in the privacy of your home
- doesn't cost a penny!



THE EARLIER YOU START PERFORMING BSE,
the better you'll know your breasts -- and the more likely you'll be to spot any changes. (Many breast cancers are found by women themselves!)

WHY SOME WOMEN DON'T DO BSE



Breasts are normal parts of the human body. Would you be reluctant to examine your arm or leg?

Most breast lumps are not signs of cancer. And all breast lumps can be treated, if necessary.

This is probably the most common reason women don't examine their breasts. But you can learn BSE from:

- demonstrations by a health-care professional
- breast models designed to teach BSE
- written instructions such as those that follow.

Any woman can develop breast cancer. But some women have special risks. (See page 14.)

WHEN YOU DO BSE, YOU'RE LOOKING FOR CHANGES

from month to month. Examine the whole breast area — from collarbone to below the breast, and from breastbone to armpit.

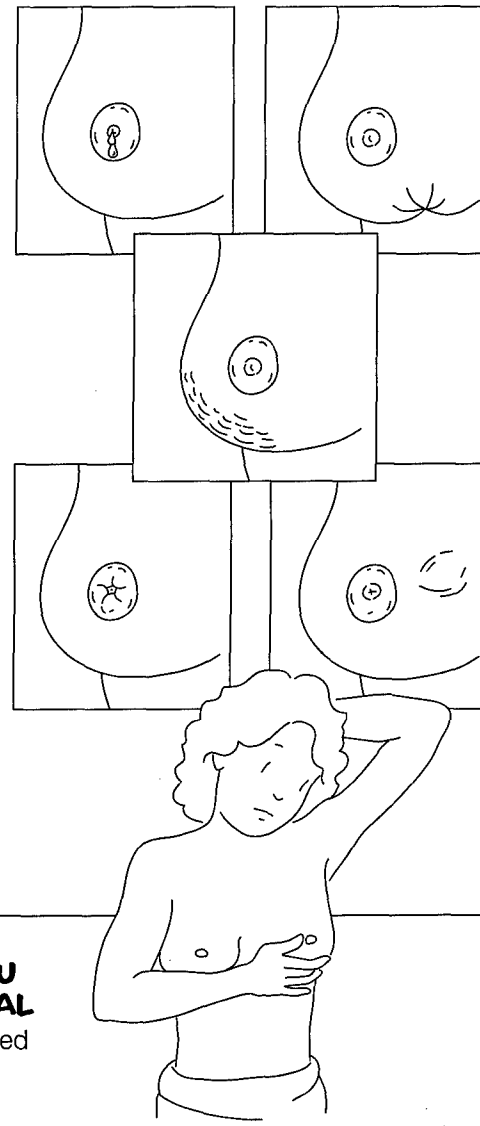
CONSULT YOUR HEALTH-CARE PROVIDER

immediately if you notice:

- any discharge
- any puckering or dimpling
- a rash or an "orange peel" texture to skin
- a newly inverted or flattened nipple, or a change in nipple angle
- a swelling or bulge
- whitish crust on a nipple or areola
- a sore that hasn't healed
- a change in a black or brown mole.

IT'S NORMAL TO FEEL A RIDGE

of tissue at the lower edge of your breast. Ribs, ducts, fat, etc., may also feel strange at first.



DON'T BE AFRAID IF YOU FIND ANYTHING UNUSUAL

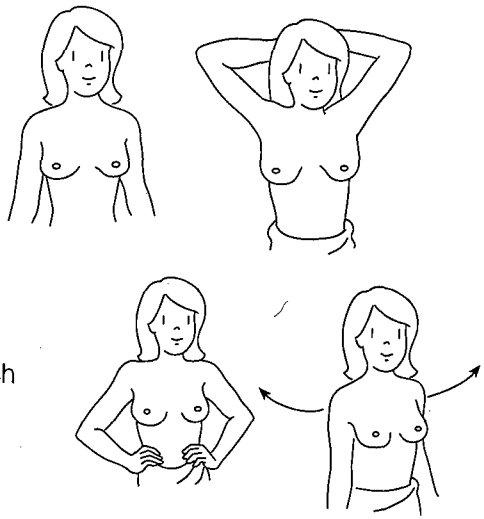
But, do get any changes checked out by a health-care provider.

EXAMINE YOUR BREASTS EVERY MONTH

a few days after the end of your period. If you're not menstruating, do BSE on the same day each month.

❶ IN A MIRROR

- Stand with arms at your sides.
- Clasp hands behind your head and press hands forward.
- Press hands firmly on hips, and bow slightly as you draw your shoulders and elbows forward.
- Turn from side to side in each of these positions.

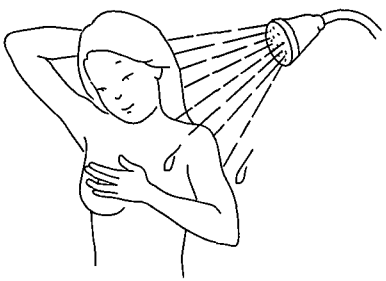


❷ WHILE LYING DOWN

- Put your left hand under your head. Use your right hand to feel your left breast.
- Start from the outer edge of the breast, and circle in toward the nipple. Or, go up and down in rows. Press firmly in small massaging motions with the pads of your fingers. Don't forget to feel the area in your armpit.
- Gently squeeze the nipple.
- Switch sides and repeat.

❸ IN THE SHOWER OR BATH

Examine breasts as in step 2. Fingers glide more easily over soapy skin.



BENIGN BREAST CONDITIONS

account for most lumps. They include:

FIBROCYSTIC CONDITIONS

This benign condition is most common in women ages 35-50. Cysts are usually firm, movable, fluid-filled sacs. These lumps are often painful, and increase in size and soreness before and during menstruation. They may disappear after menopause.

FIBROADENOMAS

These are solid, smooth, movable lumps that generally appear in women under age 40.

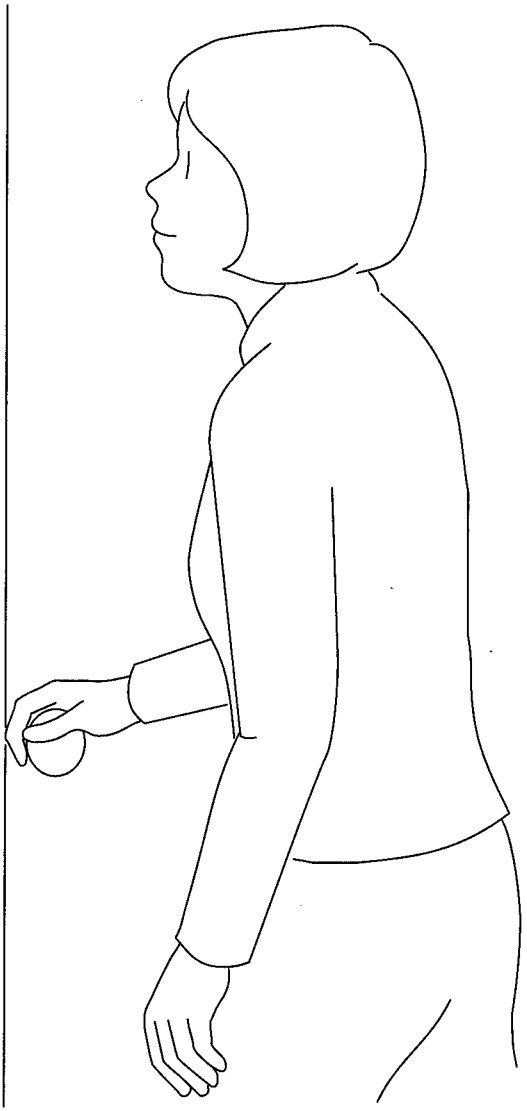
They're usually painless and often appear singly, near the nipple or near the upper sides of the breast.

INFECTIONS

Breast infections, commonly called mastitis, are bacterial infections that can cause warm, painful lumps (abscesses) in the breast. Mastitis is common in women who are breastfeeding.

BREAST CANCER

In some cases, a lump may be malignant (cancerous). When the disease is detected early, it is more treatable.



MOST CANCEROUS LUMPS

occur singly in only one breast and are often:

- painless
- hard
- rough-edged.

Unlike benign lumps, cancerous lumps don't change during the menstrual cycle. Over time, they tend to get larger.

CONTACT YOUR HEALTH-CARE PROVIDER

without delay if you:

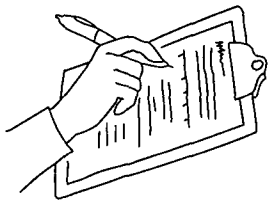
- notice any changes during BSE -- do not diagnose a lump yourself
- experience pain in your breast. (Since it can be associated with some benign conditions, pain does not necessarily mean a lump is cancerous.) Treatment for pain is available.

DIAGNOSIS AND TREATMENT OF BREAST PROBLEMS

may involve:

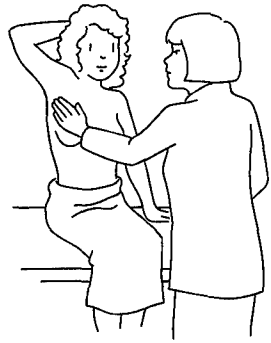
YOUR MEDICAL HISTORY

-- the age you began menstruating, medications you are taking, whether any family members have had breast disease, etc.



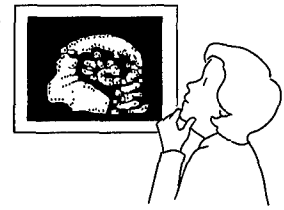
PALPATION

-- basically the same as BSE, but performed by your health-care provider.



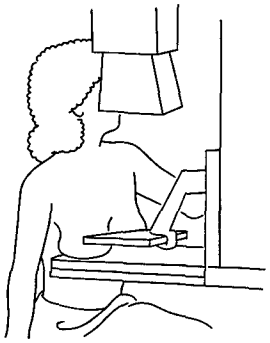
ULTRASOUND

-- when sound waves are sent into the breast. A computer analyzes their "echoes" and creates an image of the breast on a screen.



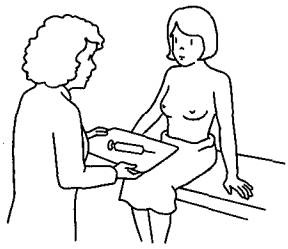
MAMMOGRAPHY

-- to evaluate a lump, or to reveal other changes in the breast.



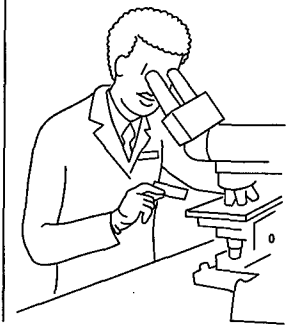
ASPIRATION

-- when a slender needle is used to withdraw fluid from a cyst. Aspiration can be used for diagnosis and to treat a cyst that causes pain.



BIOPSY

-- when all or part of a lump is surgically removed for study. Biopsy may also be used to treat some conditions.



PRESCRIPTION MEDICATIONS

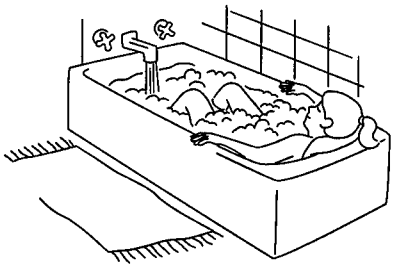
if pain from fibrocystic conditions is severe. Remember -- any medication can have side effects.

SELF-HELP METHODS MAY BE RECOMMENDED

to ease the discomfort of fibrocystic conditions. You may be advised to:

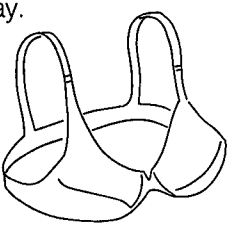
SOAK

in a warm tub.



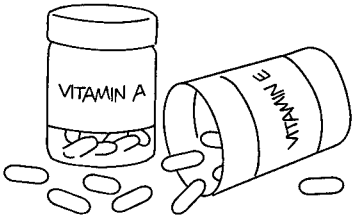
WEAR

a good, padded bra night and day.



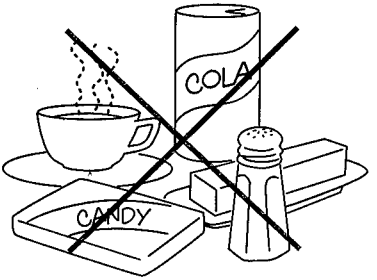
TAKE VITAMINS A AND E,

which seem to help some women, but which can cause side effects. (Do not take vitamin supplements without the approval of your health-care provider.)



CHANGE YOUR DIET

- Reduce or eliminate coffee, tea, chocolate and cola drinks. They contain caffeine and other chemicals linked to breast pain.
- Eat less fat. Fat raises the level of hormones that influence fibrocystic conditions.
- Reduce salt. Salt promotes fluid buildup, which adds to pain.
- Don't smoke.



WHAT'S YOUR BREAST CANCER RISK?

The causes of breast cancer are unknown, but the disease seems to involve many factors. To get a general idea of your risk, answer these questions:

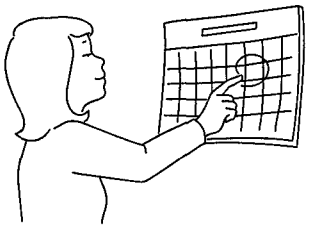
FACTORS	RISK		
	LOWER	MODERATE	HIGHER
AGE?	☐ Under 40	☐ 40-50	☐ Over 50
PREVIOUS CANCER?	☐ No		☐ Yes
AGE AT FIRST PERIOD?	☐ Over 15	☐ 12-14	☐ Under 12
AGE AT MENOPAUSE?			☐ Over 55
WEIGHT?	☐ Slim		☐ Heavy
AGE AT FIRST LIVE BIRTH?	☐ Under 30	☐ Over 30	☐ Childless
MOTHER HAD BREAST CANCER?	☐ No		☐ Yes
SISTER HAD BREAST CANCER?	☐ No		☐ Yes

The more answers you checked in the left-hand column, the lower your possible risk. But the truth is, every woman is at some risk for breast cancer! Discuss your answers with your health-care provider, and ask about steps you could take to reduce your risk.

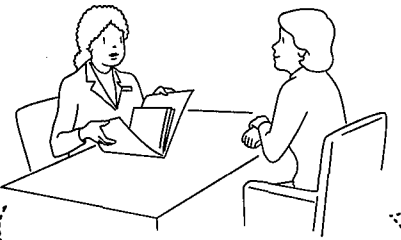
So o --

PLAY A ROLE IN BREAST HEALTH!

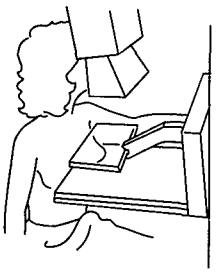
✓ **PERFORM BSE**
every month, and learn what's normal for you.

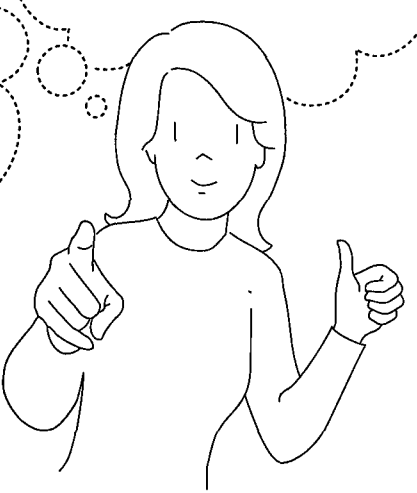


✓ **SCHEDULE**
regular breast exams with your health-care provider.



✓ **HAVE MAMMOGRAMS**
as recommended.





Remember -- if you feel a lump, it's probably <u>not</u> cancer. But for peace of mind, find out for sure.

Access... Med PLUS

A Quality Health Plan Your Family Can Trust

Tennessee Managed Care Network
205 Reidhurst Avenue, Suite N-104
Nashville, Tennessee 37202-0205
1-800-523-3112

Promoting Breast Cancer Screening in a Low Income Managed Care Population

DOD Level 3 Intervention Script

Purpose: To successfully reach Access MedPLUS female members 40 years and older who have not had their annual mammogram that are listed for comprehensive breast cancer screening prevention.

To be used by: Community Health Outreach Workers and other health professionals assigned to this task.

Caution: This must be utilized as a guide for reaching and teaching the Access MedPLUS members with the breast cancer screening mammogram messages. It should never be read verbatim because each situation will be slightly different. However, this resource has been developed to ensure that generally, the subjects will be hearing basically the same message.

General Intervention Script

Hello (member's name), my name is (Chorw's name). I am a member of the Access MedPLUS Community Health Outreach Worker team. Access MedPLUS has a strong commitment to the quality of your health care. One of the ways we express this commitment is by assisting our members such as yourself to protect your health by taking certain preventive measures. (Member's name), based on the American Cancer Society's recommended guidelines, it is time to schedule your mammogram. The American Cancer Society suggests that women 40 years and older should have a mammogram yearly. You should have received letters recently from Access MedPLUS and your health care provider encouraging you to have this test.

The mammogram is simply an x-ray of the breast that helps to locate lumps, if any, in the breast. Most of these lumps are harmless, but occasionally such a lump could be cancerous. If so, the mammogram can help to find the problem early when breast cancer can be more easily treated.

Regular mammogram screenings can help to find cancer as early as two years before you or your doctor will be able to feel a lump. The earlier you find breast cancer the better your chances will be to save your breast and your life. The cost of the test is completely covered by Access MedPLUS. It only takes about 15-20 minutes to have a mammogram. Remember (member's name), you can have breast cancer and be feeling just fine. You may have symptoms but this is not always the case. Some women have no symptoms until the cancer has spread. This is what we want to help you avoid. It's a fact that one in nine American women will develop breast cancer over the course of her life. But unlike it used to be, finding and treating breast cancer does not automatically mean the loss of your

breast or your life. When found early breast cancer is being successfully treated in the majority of cases. Getting your mammogram will give you the assurance that you have taken the easiest and most effective step to protect yourself from breast cancer.

Now, let's get you scheduled for your test. Would you like me to assist you with setting up your appointment?

If yes
Take the usual steps taken in assisting members with this request.

If no:
(Inquire about the member's concerns or objections. Try to resolve any misunderstandings and misinformation so that the member will be willing to schedule her mammogram.)
When will you be able to call and schedule your appointment? Once you schedule your appointment, please call me and let me know when you are planning to go. If you need transportation or are unsure of the location, remember you can either call the place where the mammogram test is scheduled or you can call me for help. Here is my card, again, my name is (Chorw's name). I am glad you have decided to get this important test done. Thank you for allowing me to share this information with you.

We need to determine whether we will be able to provide any type of small gift for the member taking the time to listen or agree to schedule her mammogram.

Barrier or common objections

Fear of what the test may find -

Response: Most mammogram reports are good news. Of the lumps that the test finds, 80% of those will not be cancer. But if it is cancer, the mammogram can help to discover it early when the disease can be most easily treated.

I believe if I had something like cancer I would know it -

Response: In the early stages of breast cancer there are usually no symptons. Unlike other diseases, cancer like high blood pressure can be present a long time before you begin to feel ill. It is better to go and be check out just in case.

Cancer or breast cancer does not run in my family (lack of family history)-

Response: In the majority of breast cancer cases, there is no family history of the disease. This does not mean there is actually no history of the disease, it simply means either it was not discussed, shared or recorded. Only recently have women become more open to discuss breast cancer. It has historically been a disease that women have not felt comfortable to discuss.

I heard a mammogram is painful

Response: For some women the test is uncomfortable. The discomfort occurs when the breast is gently pressed down so the mammogram machine can get a good quality view of the breast. The pressure on lasts a few minutes while the picture is being taken. It is a good idea to have the test done after your menstrual, when the breast are not as tender. You can expect the discomfort to stop as soon as the image or picture is taken. The benefits of having your mammogram will far out weigh the momentary discomfort you may feel during the test. Remember only a few women report discomfort, most women describe it as simply a lot of pressure. If during your mammogram you are too uncomfortable, simply tell your nurse, and she can usually make the appropriate adjustments. If you know you are really sensitive, you may want to take a mild pain reliever about an hour before the mammogram appointment.

I've heard x-rays can cause cancer-
Response: The amount of radiation you will receive during your mammogram will be less than taking an air plane from here to Chicago. It is a low radiation test. The risk of health problems related to mammogram is extremely low.

Member Outreach Activity Form
Promoting Breast Cancer Screening In A Low Income Managed Care Population

Date/Time _____ AM (or) PM

Name: _____
Address: _____ City: _____ Zip Code: _____
Phone #: ( ) _____

Member #: _____ Group Assignment: 3

Please complete if different from above:

Name: _____
Address: _____ City: _____ Zip Code: _____
Phone #: ( ) _____

Member #: _____

Currently with Access Med Plus: Yes ☐ No ☐

This is the First ☐ or Second ☐ Attempt to reach this member

Member has been reached: Yes ☐ No ☐

Outreach materials distributed: Yes ☐ No ☐

Member has agreed to contact their PCP for a mammogram: Yes ☐ No ☐

Member was not reached because:

No Telephone # Listed

- ☐ Not at Home
- ☐ Moved
- ☐ Wrong Address
- ☐ No Physical Address
- ☐ Language Barrier
- ☐ Out of Territory
- ☐ Other

Telephone # Listed:

- ☐ Wrong #
- ☐ Telephone # Disconnected
- ☐ No Answer
- ☐ Not at Home
- ☐ Changed to Unlisted #
- ☐ Other

Member reached but declined outreach because:

- ☐ Not Interested
- ☐ Recently had a Mammogram
- ☐ No Longer with Access
- ☐ Sick or Caring for a Sick Person
- ☐ Lack of Time
- ☐ Too Afraid to Discuss Breast Health/Mammograms
- ☐ Other _____

Member accepted material Yes ☐ No ☐

Comments: _____

_____

_____

_____

Person Taking Information

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Table .X Percent of Women Reported following Economic Barrier Components				
	Transportatio Problem	Time-off from wor for Appointment	Cost of Doctors Care is Expensiv	Cost of Medical Service is Expensive
Race				
Blacks	48.7	26.9	28.2	78.2
Whites	50.0	18.5	40.2	74.7
Age in years				
40-49	49.1		28.3	79.2
50-64	46.0	14.9	40.2	74.4
65 and Above	68.0	24.0	28.0	76.0
Education in Years				
<12	62.6	16.5	36.3	78.9
12	43.4	35.8	32.1	75.5
>12	14.3	14.3	38.1	71.4
Annual family income				
< $10,000	59.0	18.1	34.3	78.8
$10,000 - $15,000	43.8	43.8	34.4	75.0
> $15,000	19.0	19.0	38.1	71.4
Martial status				
Currently Married	28.3	21.7	26.1	69.6
Single	55.6	22.2	48.1	70.4
Other p.002	58.3	22.9	34.4	81.1
Cancer information received				
Less than median	56.1	24.4	45.1	75.0
Median and more	43.2	20.5	25	77.3
Awareness of screening test				
Less than median	52.9	25.0	35.7	78.4
Median and more	33.3	10.0	30.0	66.7
Cancer knowledge				
Less than median	56.4	24.4	39.7	76.6
Median and more	43.5	20.7	30.4	76.1

Barriers Items	Mammogram		Breast Clinical Exam		Physical Exam	
	Bivariate	Control	Bivariate	Control	Bivariate	Control
Personal barriers						
Treatment not worth	-0.06	-0.066	0.099~	0.103~	-0.153*	-0.17*
No hope	-0.07	-0.083	-0.065	-0.05	-0.003	-0.013
Yearly checkup not worth	-0.12*	-0.131*	0.065	0.052	-0.102~	-0.11~
Afraid of Drs' findings	-0.004	-0.02	-0.016	-0.016	-0.18***	-0.208***
CBE embarasses	-0.147*	-0.119~	-0.045	-0.001	-0.178**	-0.184**
Wrong finding	-0.156*	-0.16*	-0.009	0.01	-0.175**	-0.186**
Take easy when not feeling well	-0.089	-0.065	-0.156*	-0.136*	-0.107~	-0.112~
Economic barriers						
Services are expensive	0.105~	0.103	0.013	-0.012	-0.067	-0.067
No transportation	0.07	0.094	-0.062	0.004	-0.101~	-0.145*
Cost of Doctor's services	-0.025	-0.026	-0.102~	-0.094	-0.148*	-0.15*
Getting off work	0.045	0.026	0.089	0.057	-0.06	-0.06
System barriers						
Do not trust Dr's capabilites	-0.083	-0.077	-0.063	-0.071	-0.149*	-0.15*
Not aware of Health Services	-0.159*	-0.174**	-0.302****	-0.301***	-0.17**	-0.171**
Mammogram recomended	-0.169**	-0.193***	-0.098	-0.66	-0.105~	-0.116~
X-ray exposure	0.017	-0.013	0.035	0.015	-0.044	-0.053
Appreciate reminder	0.061	0.094	-0.087	-0.075	0.031	0.037
Waiting appointment	0.146*	0.149*	0.174**	0.166*	-0.173**	-0.17**
Uncomfortable with Drs.	-0.104~	-0.102	-0.008	0.021	-0.124*	-0.135*
Non explaination of procedure	0.075	0.045	0.113~	0.085	-0.06	-0.05
Need privacy	-0.003	-0.018	-0.113~	-0.136*	0.047	0.052
Worry about pain	-0.056	-0.069	0.021	0.007	-0.138*	-0.148*

Table .XX Regression Model of Total Barriers, Personal Barriers, Economic Barriers and System Barriers of Breast Cancer Screening on Socio-demographic, Cancer Information Received, Awareness of Screening tests and Cancer Knowledge of women.

	Total Barriers		Personal Barriers		Economic Barriers		System Barriers	
Independent Variables	Beta Cofficient		Beta Cofficient		Beta Cofficient		Beta Cofficient	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Race (white vs. black=1)	-0.06		0.02		-0.07		-0.09	
Age (40-96 years)	-0.01		0.05		-0.03		-0.04	
Education groups	-0.08		-0.12	-0.16*	-0.06		-0.01	
Annual family income	0.10		-0.04		0.04		0.20**	0.19**
Currently married	-0.18**	-0.15*	-0.06		-0.16~	-0.16*	-0.21**	-0.19**
Amount of cancer informatio	-0.11	-0.14~	-0.05		-0.07		-0.12	-0.16*
Awareness of screening test	-0.07		-0.09		-0.05		-0.03	
Cancer knowledge	-0.21**	-0.23***	-0.3****	0.37*****	-0.06		-0.12	
Intercept	7.81	8.13	1.67	1.74	2.55	0.26	3.94	1.11
F-Test	2.83	6.47	4.65	16.8	1.09	4	2.23	3.52
P-Value	0.006	0.0004	0	0	0.37	0.05	0.04	0.02
R-Square	13.90%	11.70%	16.40%	18.60%	5.90%	2.70%	0.09	6.71

Difficulty in Reaching Low Income Women for Screening Mammography

Robert E. Hardy, MD*; Nasar U. Ahmed, PhD*; Margaret K. Hargreaves, PhD* Kofi A. Semenya, PhD; Ling Wu, MD, PhD*; Yigsaw Belay, MS, PAHM+; Anthony J. Cebrun, JD, MPH++**

From: *The Department of Internal Medicine and Consortium Cancer Center - Meharry Medical College, Nashville, TN 37208

**The Department of Family Medicine and Consortium Cancer Center - Meharry Medical College, Nashville, TN 37208

+Director of Health Promotion and Prevention - TN Managed Care Network, Nashville TN

++CEO TN Managed Care Network

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Abstract

Low-income women have a high mortality from breast cancer. Yet they participate in breast cancer prevention screening less than women in the general population. An intervention study to improve screening mammography rates of low-income women participating in the TennCare program (State Medicaid and Medicare Program) revealed significant barriers to reaching these women. Intervention methods included mail, telephone calls and home visits.

Results indicate that only 24% of the women could be contacted for a baseline survey. Reasons for noncontact included: absence from home (38.8%); having moved (22.3%); refusal to participate (16.5%); having no physical domicile (14.7%); language barriers (3.5%); and miscellaneous other factors (4.0%). Women with telephones tended to have relatively a higher economic status and were more successfully reached than women without telephones. These findings provide useful insights for future program planning and research design.

Keywords: screening mammography, low income, managed care and barriers

Poverty is known to be associated with premature mortality and decreased life expectancy. In general, populations in the least developed and most impoverished countries have lower life expectancies compared to developed countries (1). Within the United States, minorities who are disproportionately represented within the lower socioeconomic stratum of the society have higher mortality rates for most of the major causes of death (2). Among the major causes of death are cardiovascular diseases, cancer, cerebrovascular disease, diabetes, accidents and adverse effects, homicide, and AIDS. African Americans and some other minority groups, including Hispanic Americans, have higher rates of mortality from most of these disorders compared to majority white Americans.

Breast cancer represents 30 percent of cancer deaths among Tennessee women. While the incidence or number of new cases per 100,000 population is higher among white women, African American and Hispanic women die at higher rates (3). Yet, breast cancer deaths like those of cervical cancer, are among the most preventable, because they are amenable to early detection and treatment at a time when most curable. Screening mammography, the most effective method for early breast cancer detection is more underutilized by low income women, including African Americans, who often present at more advanced stages of disease, and have higher breast cancer mortality than women with higher incomes (4-6). The reason for this deficit in screening participation has been investigated by others who have identified barriers to screening which are unique or disproportionately associated with poor women (7-9).

In our study of methods to increase screening mammography in low-income women who are members of a Managed Care Organization (MCO), investigators found not only low levels of participation, but also encountered extreme difficulty in contacting the targeted women for the

planned intervention. In this report, we analyze and chronicle the difficulties, highlighting the scope of the problem and making suggestions for overcoming these difficulties.

Methods

The subjects of this study were women 40 years and older who are members of Access Med Plus, a TennCare Managed Care Organization (MCO). TennCare is the State of Tennessee's health care finance reform program which superseded Medicaid in 1994. TennCare members include women and families below the poverty level. Those up to 200% above poverty levels and uninsurable individuals are eligible to buy into the program as well. The women reside in the Nashville Metropolitan Standard Statistical Area which includes Davidson County and six surrounding counties of Sumner, Wilson, Williamson, Rutherford, Dixon and Cheatam. Permission for gathering patient information was obtained from the TennCare Bureau, Medical Director and Health Services Committee of Access-Med Plus, as well as approval from the Meharry Medical College Human Subject Review Board.

The project required the determination of baseline screening mammography participation through the analysis of mammogram claims data. Women who were non compliant with screening mammography for one year prior to the study were allocated randomly to one of three groups, including: 1) a simple letter intervention; 2) a more complex intervention consisting of letters, counseling and home visits; and 3) a control group of usual care. As a prelude to these interventions a questionnaire was administered to a sample of 814 women inclusive of each of the three groups. This questionnaire was designed to determine the Knowledge, Attitudes, and Practices (KAP) of the populations and to test its homogeneity across the groups. The details of the KAP will be described in another publication.

This report focuses on Davidson County only, where attempts were made to reach women by telephone and/or home visits. Data pertaining to obstacles were collected only in Davidson County where Community Health Outreach Workers were used for home visits. The Community Health Outreach Workers were supplied by the MCO and trained by a Health Educator-Coordinator associated with the program. In particularly difficult situations, investigators assisted with this outreach. This report addresses the obstacles encountered in this outreach.

Statistical Methods

The data describe the number of attempts made to reach the women and factors associated with reaching them. Data were entered into the software program MS Excel. Data were processed using the SPSS program. To test the difference where appropriate, a $\chi 2$ test was used. A conventional ρ value of 0.05 for significance level using a two tailed method was applied.

Results

Description of the Study Group

A list of 1243 women 40 years of age and older were provided to investigators by Access Med Plus. These women had no record of having had a mammogram within the previous twelve months prior to initiation of the project. Four hundred and eighty one women who had had mammograms during the prior year were excluded from the total number by the MCO.

Demographic Factors

Of the women listed, six hundred and sixty six women were white, 469 were African American, 43 – Cuban/Haitian, 3 – Hispanic, 7 – Asian/Oriental, and 4 – American Indian, while 117 - did not indicate their race. African American women were younger than white women

(52.7 vs. 56.6 years; $p = 0.01$). Fifty one percent of African American women were 40 – 49 years old compared to 40% for white women. African American women were single parents at more than three times the rate of white women (25.3% vs. 7.5%) and were also found to be currently married at a rate half as much as for white women (17.7% vs. 34.4%). While all women had low incomes, more African American women than white (43.1% vs. 36%) were from households with annual incomes of less than $5000.

Telephone Ownership

Only 35% of the women in the target population had telephones. This percentage was true also for respondents to the survey. A higher percent of white women had a telephone (42%) compared to African American women (31%). Of the telephone numbers provided by these women, approximately 50% were inaccurate or not useful. Thus only 17% of women in this population of low-income women were reachable by telephone. An average of 4 successive attempts had to be made to reach these women. Reasons for non-contact by telephones included the following: 1) telephone numbers given were those of relatives or friends; 2) telephones were disconnected; 3) previous work telephone numbers were given; 4) no answer was obtained after several rings and 5) the person had moved without a forwarding number.

Personal Home Visits

Six hundred and eleven attempts were made to contact the sample of 362 women (Table 1). Home visits were attempted after initial non-contact by telephone. When no telephone number was provided, home visits were made by Community Health Outreach Workers (CHOW) who made two additional attempts. Some visits were made on Saturday morning and during evening hours to increase the rate of contact.

One hundred and thirty nine (139) surveys were completed. Contacts were made by telephone call and multiple home visits from Community Health Outreach Workers. Table 1 indicates the effort needed to reach 139 women. From the initiation of the effort, attempts ranged from 1 to 5 with an overall average number of 4.4 attempts per successful contact (Table 1). The vast majority (90%) of subjects successfully reached were contacted on the initial attempt. The average number of attempts for each success was 1.8 attempts for this subgroup (Table 1). In contrast, women requiring multiple attempts were unlikely ever to be reached. Table 2 classifies successes by age, race and telephone ownership.

Because it was not possible to know the actual socioeconomic status of those women not contacted, telephone registration was used as a surrogate measure. A direct correlation between telephone ownership and income levels of women who were reached is shown in Fig. 1. In Table 3 is outlined telephone ownership by age, race, income, and marital status. It is of interest that a larger proportion of white women had telephones compared to African American women (46.9% vs. 32%). More younger women (40 – 64 years of age) had a telephone than did older women (39.2% vs. 34.9%). A higher percent of married women had a telephone (70%) followed by single women (64.3%). Fifty percent, 35.3% and 32.3% of divorced, separate and widowed women have telephones respectively.

Finally, reasons for not being reached are displayed in Table 4 by race and age. Reasons for contact difficulties include: 1) no one at home (38.8%); 2) moved (22.3%); 3) refusal to participate (16.5%); 4) no physical address (14.7%); 5) language barrier (3.6%); and 6) miscellaneous other reasons (4.0%). Table 2 reveals that the variables important in terms of reaching subjects include having a telephone number ($p < .0001$) and race ($p < .002$). Forty three

percent of white women and 38.3% of African American women were reached by all efforts.

Discussion

Low-income women are known to be at risk for poor outcomes of breast cancer mortality compared to more affluent middle class women (4-6). It is documented that this poorer outcome is related to late stage of diagnosis and reflects the relatively low use of screening mammograms and clinical breast exams by these women. Barriers which are found to be associated with a lack of screening participation include: 1) age; 2) education; 3) no health insurance coverage, work obligations, a lack of transportation; 4) institutional and physician barriers; and 5) cultural and knowledge/attitudinal factors (10-17). Since the 1992 mandate by Congress for Medicare coverage of eligible women 65 years and over, there has been an increase in mammography use by these women (18). However, Rimer etal. have found that a lack of physician recommendation is a major cause of non-participation in screening mammography (19). Other factors of importance have included attitudes related to cancer and the efficacy of its prevention and treatment. Several reports state that black women have a negative and/or fatalistic view of cancer and tend to have an external locus of control (20), while Hispanic women experience barriers such as language, culture and a lack of knowledge (21).

Among TennCare women coverage is provided for screening mammography for women 40 years of age and above. Yet, the rate of mammography use is only 25 percent (22). Our survey findings indicate that while women were non-participants in mammography, nevertheless they were aware of mammography and its benefits (73%). Having a usual source of care is known to be associated with increased screening rates and many women state that they would obtain a screening mammogram if recommended by their doctor. Yet assignment of women to a

primary care physician in TennCare does not seem to have been effective. It appears that many of these women do not have encounters with their primary care physicians – in spite of insurance and their stated behavioral intentions. They therefore, may have had no opportunity to be counseled about breast screening recommendations.

Our experiences indicate that it is difficult to reach these women. Even when Community Health Outreach Workers were sent to their recorded place of residence, only 24% could be contacted. In fact, 22.1% had moved since initial sign up to TennCare within the past three years and no physical domiciliary structure existed at the stated address for nearly 15 percent of those women when home visits were attempted. Language was not a major barrier in this study because of the ethnic composition of the population. Women were usually cooperative when contacted, however, twice as many white as African American women refused to respond when reached.

Conclusion

A major obstacle to the use of screening mammography and other preventive services among poor women appears to be the lack of a stable or permanent address, probably due to a tendency for these low income women to move, and a lack of a means of easy communication such as by private telephone. This again may indicate a significant amount of instability in their lives and a difficulty in obtaining basic life requirements such as food, clothing and shelter. It indicates that many of these women are indeed struggling to live. According to Dr. Harold Freeman, Chairman of the President's Cancer Panel, poverty means not having many choices (23). The poor have to prioritize their needs within their limited resources. In such a setting, more immediate and critical needs are of more concern than prevention and monitoring of health problems which may become serious problems only in the future.

If these women are to be reached in order to enable early detection of breast cancer and prevention of mortality, a more holistic approach to this life problem must be taken. Such intervention will require integration of information about the risks and benefits of cancer and other illness prevention behavior. A multifaceted approach includes the use of outreach workers and social campaigns to overcome barriers. The provision of more global opportunities for these women and their families to move out of the poverty cycle is the true challenge, and would likely have the greatest effect on these women's behavior and on their futures.

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Table 1: Number of Attempts and Survey Success					
Attempts Per Subject	**Number of Subjects**	**Percent**	**Number of Attempts**	**Successful Attempts**	**Number of Attempts Per Success**
1	222	61.3	222	125	1.8
2	44	12.2	88	6	14.7
3	85	23.5	255	4	63.8
4	9	2.5	36	3	12.0
5	2	0.5	10	1	10.0
Total	**362**	**100**	**611**	**139**	**4.4**

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Table 2: Successful Attempts by Age, Race and Telephone Ownership

	Number of Subjects	Success N	Success %	P-value
Age				
40-64	319	128	40.3	
65+	43	11	25.6	**.065**
Race				
Black	169	72	42.6	
White	175	67	38.3	
Other	18	0	0.0	**.002**
Telephone				
Yes	140	71	50.7	
No	222	68	49.3	**.000**
Total	**362**	**139**	**38.4**	

Table 3: Telephone Ownership by Age, Race, Income and Marital Status

	Number of Subjects	% With Telephones
Age		
40-64	319	39.2
65 and over	43	34.9
Total	**362**	**38.7**
Race		
Black	169	32.0
White	175	46.9
Other	18	22.2
Total	**362**	**38.7**
Income		
Up to 5,000	55	38.2
5,001 to 10,000	31	51.6
10,000 to 15,000	26	73.1
Over 15,000	11	81.8
Total	**123**	**51.2**
Marital Status		
Married	34	70.6
Single	28	64.3
Divorced	24	50.0
Separated	17	35.3
Widow	31	32.3
Total	**134**	**52.2**

Table 4: Reasons for not Being Reached by Race and Age

Reasons	All Subjects		RACE						AGE			
			Black		White		Others		40-64		65 and over	
	N	%	N	%	N	%	N	%	N	%	N	%
Not at Home	87	38.8	50	51.1	34	31.5	3	16.7	76	39.6	11	34.4
Moved	50	22.3	23	23.5	24	22.2	3	16.7	43	22.4	7	21.9
Refused to respond	37	16.5	10	10.2	24	22.2	3	16.7	32	16.7	5	15.6
No physical address	33	14.7	12	12.2	20	18.5	1	5.0	27	14.1	6	18.8
Language barrier	8	3.6	1	1.0	0	0.0	7	39.0	7	3.6	1	3.1
Other reasons	9	4.0	2	2.0	6	5.6	1	5.0	7	3.6	2	6.3
Total	**224**	**100.0**	**98**	**43.8**	**108**	**48.2**	**18**	**8.0**	**192**	**85.7**	**32**	**14.3**

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FIGURE 1: Distribution Of Telephone Ownership
Versus
Annual Household Income